Kramer Electronics, Ltd.

USER MANUAL

Model:

VP-410

Video-Audio to HDMI Scaler

Contents

1	**Introduction**	**1**
2	**Getting Started**	**1**
2.1	Quick Start	2
3	**Overview**	**3**
3.1	About HDMI	3
4	**Defining the VP-410 Video-Audio to HDMI Scaler**	**5**
5	**Connecting the VP-410 Video-Audio to HDMI Scaler**	**6**
6	**Controlling the VP-410 Video-Audio to HDMI Scaler**	**6**
6.1	Controlling the Output Resolution	7
6.2	Using the OSD to Change the Display Parameter Values	7
7	**Technical Specifications**	**8**

Figures

Figure 1: VP-410 Video-Audio to HDMI Scaler Front and Rear Panels 5
Figure 2: Connecting the VP-410 Video-Audio to HDMI Scaler 6

Tables

Table 1: VP-410 Video-Audio to HDMI Scaler Front and Rear Panel Features 5
Table 2: The Display Menu and Parameters 7
Table 3: The OSD Settings Menu and Parameters 8
Table 4: Technical Specifications of the VP-410 Video-Audio to HDMI Scaler 8

1 Introduction

Welcome to Kramer Electronics! Since 1981, Kramer Electronics has been providing a world of unique, creative, and affordable solutions to the vast range of problems that confront the video, audio, presentation, and broadcasting professional on a daily basis. In recent years, we have redesigned and upgraded most of our line, making the best even better! Our 1,000-plus different models now appear in 11 groups[1] that are clearly defined by function.

Congratulations on purchasing your Kramer **VP-410** *Video-Audio to HDMI Scaler*. This product is ideal for:

- Projection systems in conference rooms, boardrooms, hotels and churches
- Home theater up-scaling

The package includes the following items:

- **VP-410** *Video-Audio To HDMI Scaler*
- Power adapter (+5V DC output)
- This user manual[2]

2 Getting Started

We recommend that you:

- Unpack the equipment carefully and save the original box and packaging materials for possible future shipment
- Review the contents of this user manual
- Use Kramer high performance high resolution cables[3]

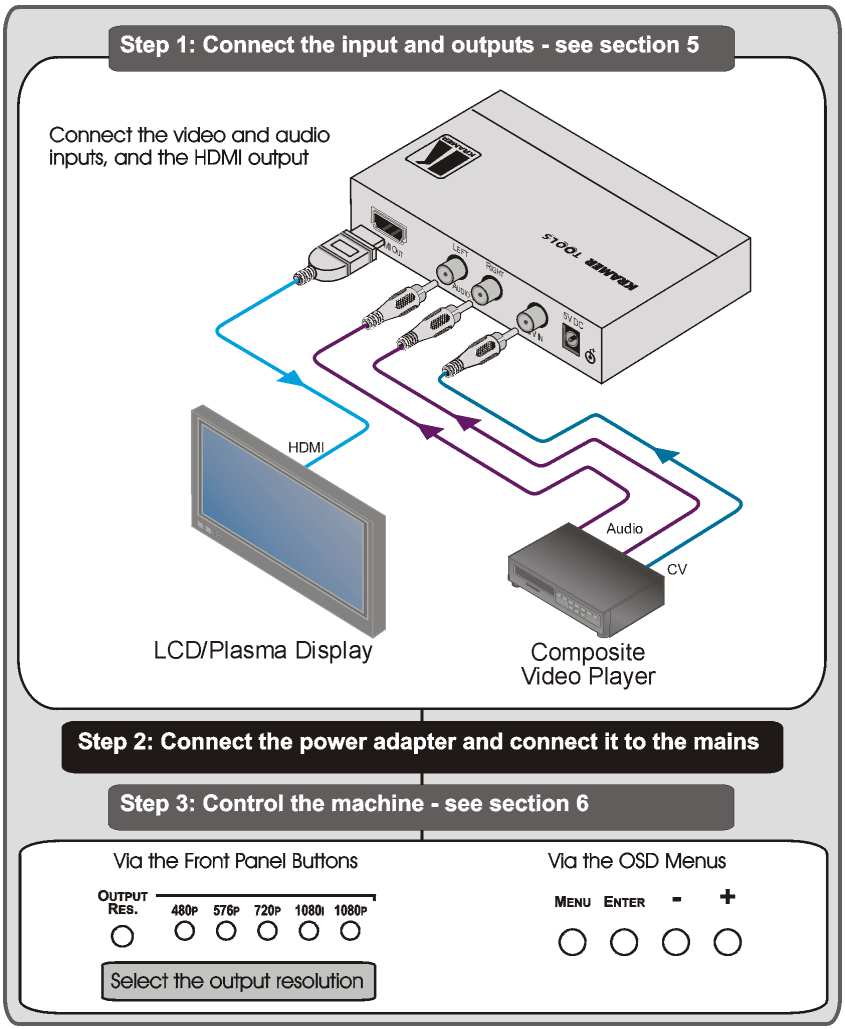
1 GROUP 1: Distribution Amplifiers; GROUP 2: Switchers and Matrix Switchers; GROUP 3: Control Systems; GROUP 4: Format/Standards Converters; GROUP 5: Range Extenders and Repeaters; GROUP 6: Specialty AV Products; GROUP 7: Scan Converters and Scalers; GROUP 8: Cables and Connectors; GROUP 9: Room Connectivity; GROUP 10: Accessories and Rack Adapters; GROUP 11: Sierra Products

2 Download up-to-date Kramer user manuals from http://www.kramerelectronics.com

3 The complete list of Kramer cables is available from http://www.kramerelectronics.com

2.1 Quick Start

This Quick Start chart summarizes the basic setup and operation steps.


Step 1: Connect the input and outputs - see section 5
Connect the video and audio inputs, and the HDMI output
HDMI
Audio
CV
LCD/Plasma Display
Composite Video Player
Step 2: Connect the power adapter and connect it to the mains
Step 3: Control the machine - see section 6
Via the Front Panel Buttons
Via the OSD Menus
OUTPUT RES.
480P 576P 720P 1080I 1080P
MENU ENTER - +
Select the output resolution

3 Overview

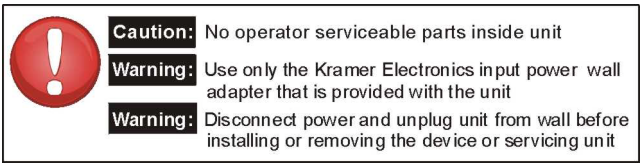
The Kramer **VP-410** *Video-Audio to HDMI Scaler* is a high quality, composite video and audio to HDMI scaler. It scales the video, embeds the audio, and transmits the signal on the HDMI output.

The **VP-410** *Video-Audio to HDMI Scaler* features:

- HDTV compatibility where the resolution can be scaled to 480p, 576p, 720p, 1080i or 1080p via a front panel selector button
- An unbalanced analog stereo audio input for the composite source
- An On-Screen Display (OSD) for easy setup and adjustment accessible via the front-panel buttons
- A non-volatile memory that retains the last settings used
- Housing in a TOOLS enclosure
- An external +5V DC source, making it suitable for field operation

To achieve the best performance we recommend:

- Connecting only high quality connection cables, thus avoiding interference, deterioration in signal quality due to poor matching, and elevated noise-levels (often associated with low quality cables)
- Avoiding interference from neighboring electrical appliances and position your Kramer **VP-410** away from moisture, excessive sunlight and dust


Caution:
No operator serviceable parts inside unit
Warning:
Use only the Kramer Electronics input power wall adapter that is provided with the unit
Warning:
Disconnect power and unplug unit from wall before installing or removing the device or servicing unit

3.1 About HDMI

High-Definition Multimedia Interface (HDMI) is an uncompressed, all-digital[1] audio/video interface, widely supported in the entertainment and home cinema industry. It delivers the maximum high-definition image and sound quality in use today. Note that Kramer Electronics Limited is an HDMI Adopter and an HDCP Licensee.

1 Ensuring an all-digital rendering of video without the losses associated with analog interfaces and their unnecessary digital-to-analog conversions

In particular, HDMI[1]:

- Provides a simple[2] interface between any audio/video source, such as a set-top box, DVD player, or A/V receiver and a video monitor, such as a digital flat LCD/plasma television (DTV), over a single extended length[3] cable
- Supports standard, enhanced, high-definition video, and multi-channel digital audio[4] on a single cable
- Transmits all ATSC HDTV standards and supports 8-channel digital audio, with bandwidth to spare to accommodate future enhancements and requirements
- Benefits consumers by providing superior, uncompressed digital video quality via a single cable[5] with a user-friendly connector
- Is backward-compatible with DVI (Digital Visual Interface)
- Supports two-way communication between the video source (such as a DVD player) and the digital television, enabling new functionality such as automatic configuration and one-button play

HDMI has the capacity to support existing high-definition video formats (720p, 1080i, and 1080p/60), standard definition formats, such as NTSC or PAL, as well as 480p and 576p.

1 HDMI, the HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI licensing LLC

2 With video and multi-channel audio combined into a single cable, the cost, complexity, and confusion of multiple cables currently used in A/V systems is reduced

3 HDMI technology has been designed to use standard copper cable construction at up to 15m

4 HDMI supports multiple audio formats, from standard stereo to multi-channel surround-sound. HDMI has the capacity to support Dolby 5.1 audio and high-resolution audio formats

5 HDMI provides the quality and functionality of a digital interface while also supporting uncompressed video formats in a simple, cost-effective manner

4 Defining the VP-410 Video-Audio to HDMI Scaler

Figure 1 and Table 1 define the **VP-410** *Video-Audio to HDMI Scaler.*

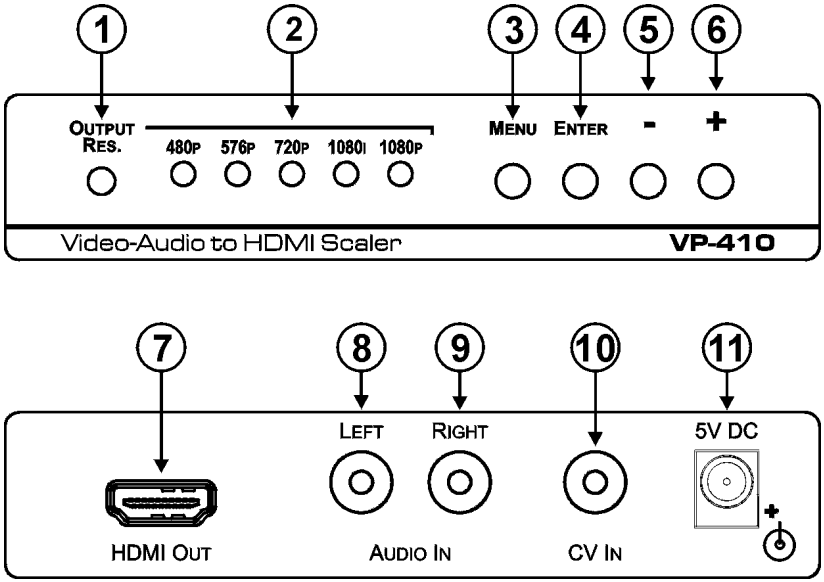


Figure 1: VP-410 Video-Audio to HDMI Scaler Front and Rear Panels

Table 1: VP-410 Video-Audio to HDMI Scaler Front and Rear Panel Features

#	Feature		Function
1	*OUTPUT RES.* Button	Output Resolution Selection	Press to select the resolution: 480p, 576p, 720p, 1080i, or 1080p
2	*480p, 576p, 720p,1080i, 1080p* Indicator LEDs		The respective LED lights indicating the selected output resolution
3	*MENU* Button	Control	Displays or exits the OSD menu (see Section 6.2)
4	*ENTER* Button		Press to highlight the value to change or to return back to the parameter menu (see Section 6.2)
5	- Button		Press to go up the parameter list or to adjust the parameter values (see Section 6.2)
6	+ Button		Press to go down the parameter list or to adjust the parameter values (see Section 6.2)
7	*HDMI OUT* Connector		Connect to HDMI acceptor
8	*AUDIO IN LEFT* RCA Connector		Connect to unbalanced audio stereo source left channel
9	*AUDIO IN RIGHT* RCA Connector		Connect to unbalanced audio stereo source right channel
10	*CV IN* RCA Connector		Connect to composite video source
11	*5V DC*		Connect to +5V DC power adapter (center conductor positive)

5 Connecting the VP-410 Video-Audio to HDMI Scaler

To connect your VP-410 as illustrated in the example in Figure 2:

1. Connect a composite video source (for example, a composite video player) to the CV IN RCA connector, and connect the unbalanced audio stereo source channels to the AUDIO IN LEFT and RIGHT RCA connectors.
2. Connect the HDMI OUT connector to the HDMI acceptor (for example, an LCD/plasma display).
3. Connect the +5V DC power adapter to the power socket and connect the adapter to the mains electricity (not shown in Figure 2).

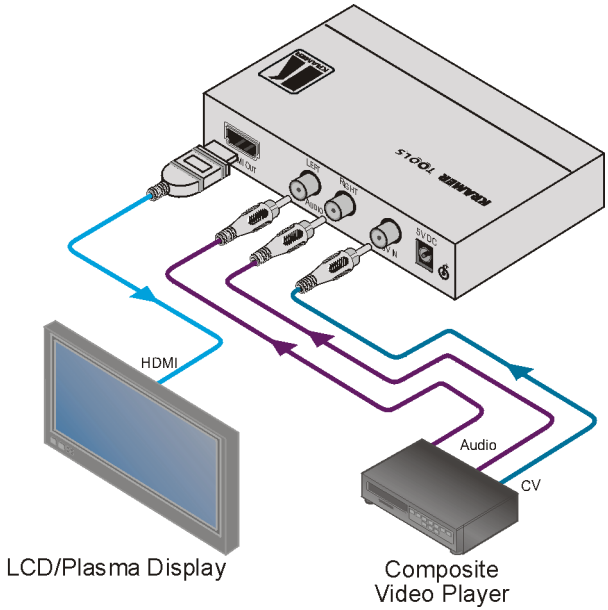


Figure 2: Connecting the VP-410 Video-Audio to HDMI Scaler

6 Controlling the VP-410 Video-Audio to HDMI Scaler

The **VP-410** is controlled directly via the front panel buttons (see Section 6.1 and Section 6.2).

The **VP-410** includes the following front panel control buttons:

- OUTPUT RES button for selecting the required output; 480p, 576p, 720p, 1080i, or 1080p
- MENU, ENTER, – and + buttons for control via the OSD menu

6.1 Controlling the Output Resolution

The OUTPUT RES button has two functions:

- Repeated pressing of the OUTPUT RES button cycles through the available output resolutions. The resolution in current operation is indicated by the lit LED
- Holding down the OUTPUT RES button for three seconds displays a list of available output resolutions with the currently selected resolution highlighted

6.2 Using the OSD to Change the Display Parameter Values

The control buttons let you set the **VP-410** display parameters via the OSD menu as follows:

- Press the MENU button to enter or exit the menu
- Press the ENTER button to enter or exit a parameter to change its value
- The + and – buttons have two functions:
  - Press the buttons to move up or down through the parameters
  - Press the buttons to increase or decrease, or cycle through the parameter values

Table 2 defines the Display Menu and parameters.

Table 2: The Display Menu and Parameters

Parameter	Function	Value Range	Factory Default
CONTRAST	Adjusts the contrast	From 0 to 255	128
BRIGHTNESS	Adjusts the brightness	From 0 to 255	128
SATURATION	Adjusts the saturation	From 0 to 255	128
HUE	Adjusts the hue	From -128 to 128 Not available in PAL	00
AUTO SYNC OFF	Turns auto sync on/off[1]	ON/OFF	OFF
ASPECT RATIO	Adjusts the aspect ratio of the output	FULL/4:3/16:9	FULL
OVER SCANNING	Adjusts the over scanning value	OFF/5%/10%/15%/20%	5%
NOISE REDUCTION	Adjusts the noise reduction filter	Off/Typ/Min/Max	Typ
OUTPUT	Adjusts the output resolution	480p/576p/720p/1080i/1080p	720p
REFRESH RATE	Sets the output refresh rate	FOLLOW/50Hz/60Hz 50Hz/60Hz not available with 480p and 576p resolutions	FOLLOW
OSD SETTINGS	Enter OSD Settings menu (see Table 3)		
FACTORY DEFAULT	Reverts settings to factory defaults		

1 When on, the VP-410 disables its output syncs after a few minutes when no input source is detected. This feature is useful for applications where the projector should automatically shut down when no source is present.

Table 3 defines the OSD Menu and parameters.

Table 3: The OSD Settings Menu and Parameters

Parameter	Function	Value Range	Factory Default
H POSITION	Adjusts the OSD horizontal position	From 0 to 42	007
V POSITION	Adjusts the OSD vertical position	From 0 to 24	005
TIMEOUT	Adjusts the OSD menu timeout	Off/From 3 to 30	005
TRANSPARENCY	Adjusts the OSD transparency	From -0 to 15	010
EXIT	Exits the OSD Settings menu to the Display Menu (see Table 2)		

7 Technical Specifications

Table 4: Technical Specifications[1] of the VP-410 Video-Audio to HDMI Scaler

INPUTS:	1 composite video (1Vpp/75 Ω)on an RCA connector 1 unbalanced audio (1Vpp/47kΩ) stereo on RCA connectors
OUTPUT:	1 HDMI
OUTPUT RESOLUTIONS[2]:	HDTV: 480p, 576p, 720p, 1080i, 1080p
PROCESSING DELAY:	2 frames
CONTROLS:	Front panel buttons for output resolution and menu driven OSD control
ADDITIONAL CONTROLS:	Contrast, brightness, saturation, hue, auto sync, aspect ratio, over scanning, noise reduction
POWER SOURCE:	+5V DC, 430mA
DIMENSIONS:	12cm x 6.9cm x 2.4cm (4.72” x 2.72” x 0.94”) W, D, H
WEIGHT:	0.4kg (0.88lbs) approx.
ACCESSORIES:	Power supply
OPTIONS:	19" rack adapter RK-3T

1 Specifications are subject to change without notice

2 All resolutions are outputted @ 60Hz, except 576p which is outputted @ 50Hz

LIMITED WARRANTY

Kramer Electronics (hereafter *Kramer*) warrants this product free from defects in material and workmanship under the following terms.

HOW LONG IS THE WARRANTY

Labor and parts are warranted for seven years from the date of the first customer purchase.

WHO IS PROTECTED?

Only the first purchase customer may enforce this warranty.

WHAT IS COVERED AND WHAT IS NOT COVERED

Except as below, this warranty covers all defects in material or workmanship in this product. The following are not covered by the warranty:

1. Any product which is not distributed by Kramer, or which is not purchased from an authorized Kramer dealer. If you are uncertain as to whether a dealer is authorized, please contact Kramer at one of the agents listed in the Web site www.kramerelectronics.com.
2. Any product, on which the serial number has been defaced, modified or removed, or on which the WARRANTY VOID IF TAMPERED sticker has been torn, reattached, removed or otherwise interfered with.
3. Damage, deterioration or malfunction resulting from:
   i) Accident, misuse, abuse, neglect, fire, water, lightning or other acts of nature
   ii) Product modification, or failure to follow instructions supplied with the product
   iii) Repair or attempted repair by anyone not authorized by Kramer
   iv) Any shipment of the product (claims must be presented to the carrier)
   v) Removal or installation of the product
   vi) Any other cause, which does not relate to a product defect
   vii) Cartons, equipment enclosures, cables or accessories used in conjunction with the product

WHAT WE WILL PAY FOR AND WHAT WE WILL NOT PAY FOR

We will pay labor and material expenses for covered items. We will not pay for the following:

1. Removal or installations charges.
2. Costs of initial technical adjustments (set-up), including adjustment of user controls or programming. These costs are the responsibility of the Kramer dealer from whom the product was purchased.
3. Shipping charges.

HOW YOU CAN GET WARRANTY SERVICE

1. To obtain service on you product, you must take or ship it prepaid to any authorized Kramer service center.
2. Whenever warranty service is required, the original dated invoice (or a copy) must be presented as proof of warranty coverage, and should be included in any shipment of the product. Please also include in any mailing a contact name, company, address, and a description of the problem(s).
3. For the name of the nearest Kramer authorized service center, consult your authorized dealer.

LIMITATION OF IMPLIED WARRANTIES

All implied warranties, including warranties of merchantability and fitness for a particular purpose, are limited in duration to the length of this warranty.

EXCLUSION OF DAMAGES

The liability of Kramer for any effective products is limited to the repair or replacement of the product at our option. Kramer shall not be liable for:

1. Damage to other property caused by defects in this product, damages based upon inconvenience, loss of use of the product, loss of time, commercial loss; or:
2. Any other damages, whether incidental, consequential or otherwise. Some countries may not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusions may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights, which vary from place to place.

NOTE: All products returned to Kramer for service must have prior approval. This may be obtained from your dealer.

This equipment has been tested to determine compliance with the requirements of:

EN-50081:	"Electromagnetic compatibility (EMC); generic emission standard. Part 1: Residential, commercial and light industry"
EN-50082:	"Electromagnetic compatibility (EMC) generic immunity standard. Part 1: Residential, commercial and light industry environment".
CFR-47:	FCC* Rules and Regulations: Part 15: "Radio frequency devices Subpart B Unintentional radiators"

CAUTION!

- Servicing the machines can only be done by an authorized Kramer technician. Any user who makes changes or modifications to the unit without the expressed approval of the manufacturer will void user authority to operate the equipment.
- Use the supplied DC power supply to feed power to the machine.
- Please use recommended interconnection cables to connect the machine to other components.

* FCC and CE approved using STP cable (for twisted pair products)

For the latest information on our products and a list of Kramer distributors, visit our Web site at www.kramerelectronics.com where updates to this user manual may be found.
We welcome your questions, comments and feedback.

Caution

Safety Warning:
Disconnect the unit from the power supply before opening/servicing.

Kramer Electronics, Ltd.
Web site: www.kramerelectronics.com
E-mail: info@kramerel.com
P/N: 2900-000627 REV 2